
ZXAppeal

JUNE '86

NEWSLETTER OF THE

\$ 1.50

VANCOUVER SINCLAIR USERS GROUP

* Next Meeting: *

* KILLARNY COMMUNITY CENTRE *
* 6260 KILLARNY ST., VANC *

* JUNE 13, 7:00 PM *

* THIS WILL BE OUR LAST MEETING *
* BEFORE THE SUMMER BREAK *

*Send him where
to get a hole comp.
Post card sent Fri 11, 1986*

ZXAPPEAL IS A MONTHLY
NEWSLETTER PUT OUT BY THE
VANCOUVER SINCLAIR USERS GROUP.
FOR MORE INFORMATION ON THE
CLUB AND ZXAPPEAL SEE THE BACKCOVER.

News

Reviews

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Sir Clive Sinclair

STEP RIGHT UP FOLKS
.....NEW EDITOR IN THE BARREL

Well, I guess it's my turn. As most of you know, we held our infamous "Annual Elections" a short time ago. Somehow I came out of it all not only holding down the Treasurer's spot but was also delighted to find I was now the Newsletter Editor. I immediately headed for the land down under hoping for a miracle but no such luck. Many thanks to Arbie for getting the last two issues out on short notice but now I guess it's my turn. Bear with me folks I'm new to the game.

The April meeting was a bit of a blur --- jet lag and all, but I seem to recall about 35 or so bodies turned out. Wilf R. spoke about the exotic doodads he and his cohorts are almost ready to release to the eager masses. Harvey had a few words about QL doings. John mentioned the latest goodies he has on the shelf available to all who have a little extra folding green. I told all about the Sinclair scene in Australia --- more later in this issue. Ken A. brought along a most fascinating display of REAL HONEST MOON ROCKS!! We seem to grow more complacent with each new advance in technology. I don't know about you guys but stuff like this blows me away. To think twenty years ago that stuff was on the moon and now we had it right in front of us. Many thanks Ken.

I suppose everyone is still not too sure how the dust will settle after the big 'Sinclair Sellout'. Well the general consensus of thought around the other user groups is that the Amstrad buyout will be a GOOD thing in the long run. Amstrad has the best computer marketing savy in Britain while Sinclair was the most innovative. Now these two firms

have just become one. Could be veeery interesting.

Anyone out there speak Spanish? We've received a copy of the 30 page newsletter of the "Grupo Usuarios T/S de Mexico". Looks great with lots of good stuff inside -- I think. I don't speak Spanish.

FIRST THE BAD NEWS.....
We're having a small problem with MONEY. We don't have any, well almost none. We need to have everyone pay their membership fees when due. I'm married to someone in the photocopying business and will be able to print the newsletter at almost no cost other than my time and labour but the postage must still be paid. After long and deep consideration the Executive has decided from this point on two changes are going to be instituted. Fees will be annual with everyone's due at the same time. All memberships will expire December 31st. Those members renewing for a partial year so as to coincide with the others will pay \$1.25 per month for how many months are required. Secondly, newsletters will only be sent out to paid up members. Sorry folks but we can't afford to give anything away any longer. Also it's not fair to those members who keep themselves paid up.

NOW FOR THE GOOD NEWS.....

Remember the T/C 2068? That's right, the 2068/Spectrum hybrid from Portugal. Well it's had some slight changes and is again available in North America. Now it's called the Timex 2048 & looks like a T/S 2068 without the cartridge port. Timex ROM, Spectrum edge connector, but also added is a Kempston compatible joystick port. Also now available is a new 1500 -- all black case with a silver keyboard. That's

.....Rod Humphreys

demonstrations in three corners while a basic course carried on in a small ante room. One of the programs demoed enabled a Spectrum to be connected to a good quality short wave radio and decode not only Morse Code but also RTTY (Radio Teletype) and SSTV (Slow Scan T.V.). Very impressive. I have a Morse decoder for the 1000 but this was quite superior. The other program demoed was ARTWORX. VERY impressive. The meeting then broke up into the usual scattered conversations. I had some very interesting and informative chats with various members and traded addresses for later corressponding. I was given a copy of each of their last two newsletters and passed them one each of our last half dozen editions. It's nice to know that even on the other side of the globe one can find an immediate common ground with a bunch of guys very much the same as the guys in our club.

[illegible]

HAV-INFO HAS INFO

You modem'ers might try a new board now on-line in Vancouver. Hav-Info at 682-1991 is our very own 'Compuserve' with information on any subject one could think off in the Greater Vancouver area: movie reviews, restaurants, personal and want ads, sports scores, cultural events, etc., and its all free. The establishments listed pay for the listing.

When I first started machine language programming on the QL, I found the distinction between machine language procedures (and functions) & jobs very confusing. Having graduated from the ZX81, I was used to sticking code wherever I could get away with it. On the QL, the operating system -QDOS, dictates where code can go, and the two straightforward places where the code can go is into extensions to the basic language as machine language procedures(or functions) or as a completely seperate job. I include machine language procedures and functions in the same category because, although they are different, they are quite similar. Jobs on the other hand can be anything.

For each of these categories, there is a well defined format which must be used to keep QDOS happy. A machine language procedure (or function) is then used in an ordinary Basic program in the same you would use 'PRINT', or any other Keyword. A job is always started with EXEC or EXEC_W. Each job is assigned a priority (0-127), so that the operating system will know how to divide up its time. A priority of zero, signifies that a job is inactive, but still resident in memory. It is possible to create jobs which are nothing but data, and which are never activated. Indeed which would crash the machine if activated. It is also possible to suspend a job, for up to 32767 frames. A frame is a slice of processor time at 60 Hz, derived from the AC frequency. So the maximum timed wait is $32767/60*60 \Rightarrow$ about 9.1 minutes. An indefinite timeout is also possible.

Examples of jobs are assemblers, the PSION quartet, and other language compilers. Basic runs as a special job.

In general, it seems to me a much clearer understanding of principles occurs when you can actually get your hands on specific examples. The code below, is a version of a job which one EXEC's to run alongside the Basic job. What the program does is monitor the Basic Variables area & print out the line number which the basic program is executing at each instant. There is an extra added wrinkle, in that Superbasic allows multiple statements per line (seperated by ':'). The program prints out the statement number as well.

The idea for this program, came from A. Robertson, an English programmer, whose code I saw via IQLUG. This implementation is my own. If you would like an assembled copy of this code, drop me a line.

```

*          CL TRACE
*          May 1/95
*          By      H Taylor
*          after   A ROBERTSON via ICLUG
*
BV_LINUM   EQU     $69          * OFFSET OF LINE NUMBER IN BASIC AREA
BV_STMNT   EQU     $6C          * OFFSET OF STATEMENT NUMBER IN BASIC AREA
*
UT_SCR     EQU     $CB          *
UT_ERR2    EQU     $CA          * QDOS VECTORS
UT_MINT     EQU     $CE          *
UT_MTEXT    EQU     $D0          *
*
MT_JINF     EQU     2           *
SD_CLEAR    EQU     $22          *
SD_BORDER   EQU     $2C          * QDOS TRAPS
ID_BYTE     EQU     5           *
MT_SUSJB    EQU     8           *
*
START      ZRA.B   TRACE          * STANDARD JOB FORMAT
          DS.B     4
          DC.W     $4AFB          * JOB FLAG IN BYTES 6,7
          DC.W     5,'TRACE'      * JOB NAME
*
TRACE      LEA     STACK_TOP,SP    * SET JOB STACK TOP
INIT       LEA     SCR_PAR,A1      * NOTE SP IS REGISTER 47
          MOVE.W   UT_SCR,A2
          JSR      (A2)            * JUMP TO UT_SCR
          TST.L    D0              * TEST FOR ERROR
          BNE      ERROR           * IF UNABLE TO OPEN SCREEN
          MOVE.L    A0,D6          * SAVE CHAN_ID IN D6
*
LOOP       MOVE.L   #2,D2          * JOB AT TOP OF TREE
          MOVE.L   #0,D1          * JOB ID OF BASIC JOB 0
          MOVE.W   #MT_JINF,D0     * NOTE MOVED CLEARS TOP 3 BYTES
          TRAP     #1              * QDOS
          MOVE.L   A0,A5          * BASE OF JOB AREA IN A5
*
          LEA     LINUM,A1         * STORAGE AREA
          MOVE.W   BV_LINUM(A5),(A1) * SAVE BASIC LINE NUMBER.WORD
          LEA     STMNT,A1         * NOTE SUPERBASIC ALLOWS MULTIPLE
*                                     * STATEMENTS PER LINE
          MOVE.B   BV_STMNT(A5),(A1) * SAVE STATEMENT NUMBER.BYTE
*
          MOVE.L   D6,A2          * RETRIEVE CHANNEL ID
          MOVE.W   #1,D3          * TIMEOUT
          MOVE.W   #SD_CLEAR,D0
          TRAP     #3              * QDOS
*
          MOVE.W   #2,D1          * COLOUR
          MOVE.W   #2,D2          * WIDTH
          MOVE.W   #SD_BORDER,D0
          TRAP     #3              * SAME TIMEOUT
*
          LEA     LINUM,A1
          MOVE.W   (A1),D1         * TOP BITS ALREADY CLEAR
          MOVE.W   UT_MINT,A2      * CHAN ID PRESERVED
          JSR      (A2)            * VECTOR
*

```

```

*
        MOVEQ    #0,D1
        MOVE.B   #F3A,D1
        MOVE.W   #1,D3
        MOVEQ    #10_8BYTE,D3
        TRAP     #3
*
        LEA      STMT,A1
        MOVEQ    #0,D1
        MOVE.B   (A1),D1
        MOVE.W   UT_MINT,A2
        JSR      (A2)
*
        MOVE.W   #2,D3
        MOVE.L   #-1,D1
        MOVE.L   #0,A1
        MOVEQ    #MT_SUGJB,D3
        TRAP     #1
*
        BRA      LOOP
*
* NOTE THERE IS ONLY ERROR TRAPPING FOR OPENING THE SCREEN
*
ERROR    MOVE.W   UT_ERR0,A2
        JSR      (A2)
        MOVEQ    #0,D3
        RTE
*
SCR_PAR  DC.B     2
        DC.B     2
        DC.B     3
        DC.B     4
        DC.W     128
        DC.W     14
        DC.W     392
        DC.W     202
*
        DC.B     2
        DC.B     2
        DC.B     3
        DC.B     4
        DC.W     128
        DC.W     14
        DC.W     392
        DC.W     202
*
LINUX    DS       1
STMT     DS       1
*
STACK    DS       #103
STACK_TOP
*
END

```

* TIMEOUT TRASHED
* CLEAR TOP 3 BYTES
* LITERAL COLON
* TIMEOUT
* EODS
* CLEAR THE TOP 3 BYTES
* GET SAVED STMT NUMBER
* CHAN ID PRESERVED
* VECTOR
* NO OF FRAMES
* THIS JOB
* FLAG BYTE OR 8
* EODS
* DO IT AGAIN
* VECTOR
* RETURN TO BASIC WITH NO ERROR
* BORDER COLOUR
* BORDER WIDTH
* PAPER
* INK
* WIDTH
* HEIGHT
* X
* Y
* RESERVE ONE WORD
* RESERVE A BYTE

There's No excuse
FOR LAZINESS
...BUT I'M WORKIN' ON IT.



The Heart of the Sinclair QL...the 68008

There is great confusion about the QL. The question is: in which computer category does the QL fall? The 32, the 16 or the 8-bit computer?! It depends on the point of view. For now, we can say that the microprocessor, the MC68008, which is the heart of the QL, is an 8/32-bit type.

The microprocessor or the Central Processing Unit (CPU) is the nerve center of all activities in the computer system. It has generally 3 major tasks:

- 1-Control of operations
- 2-Interpretation of data
- 3-Execution of instruction

But a CPU alone is not very useful. The CPU needs memory and some peripherals to communicate with the outside world. The communication is possible via a computer BUS made up of multiple connectors which carry information to or from the CPU. A computer has generally three main bus types:

- 1-Address bus
- 2-Data bus
- 3-Control bus

Until now, most home computers were built around an 8-bit CPU. (8-bit CPUs are designed to work on 8-bit words at a time.) The two most popular of these were the Z80 (ZX81, TS2068, TANDY) and the 6502 (C64, ATARI). The 68008 of the QL is, like we previously called, an 8/32-bit because it has an 8-bit wide data bus and works internally on 32-bit words. On this point, the 68008 is similar to the INTEL 8088 (IBM PC) which is an 8/16-bit CPU because of its 8-bit data bus and 16-bit internal structure. Apple's Macintosh is a 16/32-bit with its MC68000.

MC68008 vs MC68000: THE HARDWARE SIDE

The MC68008 is the "economical version" of the MC68000. In fact, the MOTOROLA's 68000 series forms a real family. The 68000, itself, has a 16-bit wide data bus, the 68008 has an 8-bit one and the 68020 has the 32-bit wide data bus. The "advantage" of the 68008 over the other members of the family is, like we said, economical because the most commonly available low cost support chips are organised on an 8-bit basis. This means that these can be more easily designed

into a system around the MC68008. Also the necessary connectors are smaller on 8-bit data bus systems than on a 16-bit data bus systems.

The address bus has been reduced on the 68008 to 20 address lines (24 on the 68000) and 3 of the 68000's control signals are not directly present on the 68008. These omissions are justified by the fact that the 68000 is a 64-pin I.C. and the 68008 is a 48-pin I.C.. With 20 address lines, the QL can address directly 1MB of memory. There is no need here for a complicated BANK SWITCHING system like on the COMMODORE 128 and ATARI 130XE. On the QL, all the memory is accessible anytime. The 68000 has 2 pins not present on the 68008, UDS (upper data strobe) and LDS (low data strobe), but on the 68008 the pin DS (data strobe) does the same job. Also the VMA (Valid Memory Address) is not present, an external circuit is required here to simulate it.

MC68008 vs MC68000: THE SOFTWARE SIDE

The 68008 has the SAME instruction set as the other members of the 68000 family. With only 56 instruction types and the 14 different addressing modes, the programmer can access up to 1000 powerful instructions. These instructions can be from 1 to 5 words long, that is 2 to 10 bytes long. The 68008 (like the 68000) has 17 all-purpose 32-bit wide registers, one 16-bit FLAGS register and a 32-bit Program Counter. The 32-bit all-purpose registers means SPEED because complex operations can be carried out internally to the 68008 with the minimum need of data to or from memory. Each one of the all-purpose registers can be used like an Accumulator and we can do operations on 1 bit, 4 bits (DIGIT), 8 bits (BYTE), 16 bits (WORD) and 32 bits (LONG WORD).

In conclusion, if you love machine code programming then the Sinclair QL is certainly a good choice.

-- REAL GAGNON
544 Hermine #2
Quebec, Quebec
CANADA G1N 2G6

Review

Reprinted from SUM, April '86.....

DISTACALC

Basically Programming
2528 West Olive Avenue
Fullerton, CA 92633
16K TS/1000, 1500; \$12.95

Were you ever taught while in school that an airplane flying from the United States to the Soviet Union flies over the North Pole? The principle involved is that of the Great Circle route. The concept flies in the face of common perception. It is shorter to travel what appears to be a curved path instead of a "straight line" when traversing great distances across the globe.

Navigators must regularly utilize the great circle concept wherein both the distance between two points and the direction to take can be calculated. All (?) that is needed is a good knowledge of non-Euclidean geometry and spherical coordinate systems...or a computer with the right software.

DISTACALC is the right software if "close" is good enough. The program calculates distance and direction along a great circle route from one point on the earth to another. It also estimates your present location if you know the point from which you departed and the direction and distance you traveled.

I asked Distacalc the distance and direction from Memphis to Nashville and back. Both cities are stored in the Distacalc database. The database is a list of 107 worldwide cities whose latitude and longitude are filed within the program.

The results obtained were satisfactory. The distance was given in statute and nautical miles and in kilometers. In addition, the azimuth, the direction in degrees measured clockwise from north, told me which way to travel to get from one to the other. For the return trip the direction should have been 180 degrees different. It was in error by one degree.

If the two points involved are not among those listed, then you can add them to the database. The name, latitude, and longitude must be entered. The file holds up to 200 locations. Individual cities can be deleted, or a new file can be started.

The second option calculates your new

position if you know your former location (latitude and longitude) and the direction (azimuth) and distance (in nautical miles) you've traveled. The term for this type of calculation is "dead reckoning". I used the same two locations and the direction and distance of travel previously calculated to determine the accuracy of this option.

The results were very close but not in perfect agreement. The calculation of my new position should have been identical to the latitude and longitude for each destination city. Instead it was off by one to two minutes. A "minute" is 1/60 of a degree. This translates into 1-2 miles of error for the 180 mile trip.

In short the distances can be considered accurate calculations, while the directions are close estimations. The instruction booklet warns that this is the case. Use Distacalc to plan your vacations but not to aim your ICBMs. (Editor's Note: since nuclear warheads generally clear quite an area, it's probably close enough for them, too!)

-- Duncan Teague
3308 Bluemont Drive
Memphis, TN 38134

TS 2068

This program was printed in an old issue of Synapse, the newsletter of the Central PA User Group.

```
20 PRINT "Enter 4 numbers betw
een 1 and 20"
30 INPUT a,b,c,d
35 CLS
40 LET t=0
50 LET x1=125+125*SIN (a*t)
60 LET y1=87+87*SIN (b*t)
70 LET x2=125+125*SIN (c*t)
80 LET y2=87+87*SIN (d*t)
90 PLOT x1,y1
100 DRAW x2-x1,y2-y1
110 LET t=t+.01
120 GO TO 50
```

Milestones

by Wes Brzozowski, SINCUS

Sometimes it's worth taking a little look at where we've been so we can appreciate where we are. We may feel that the present support for the T/S computers is nothing less than abyssal. While this maybe true by modern standards, just a short look back can show us how quickly we forget and perhaps, how spoiled we've become.

Having been involved with personal computers for about years, I've been privileged to see the field evolve, first hand. I've been able to work with many of the old gadgets that have come along, over the years. In other cases, I've been at least able to see the items, or talk to those who've used them. The vast changes we've had are absolutely breathtaking.

This will not be a comprehensive history of home computing. There's not enough space (or reader interest) for it. We'll just cover a few highlights to give a feel for computing in the past. Note that I've tried to make this as accurate as possible, verifying my facts and figures wherever I could. Still, some parts are done entirely from memory and a "verbal bug" or two may creep in. If so, please forgive me.

What computers were available 12 years ago? They might have been more aptly called "computer trainers". You might answer an ad in an electronics magazine, send hundreds of dollars, and get a bag of parts. These would be assembled into a little gadget that you "programmed" by flipping some switches. The output would be some little lights. Some of these items actually contained an obsolete 4004 or 8008 microprocessor.

Your program was machine code which you entered in binary form. There was no cassette interface, as there wasn't enough memory to make it necessary. Some early enthusiasts bought and learned from these, others felt then too limiting and avoided them.

The next alternative was to design and build your own computer. Since commercial support was unheard of, you didn't have to be compatible with anything. Some didn't even use microprocessors. The then "top-of-the-line" chip, Intel's 8080A then cost about \$180 apiece. Others were difficult to use and still quite costly. So some home designed computers included a custom CPU built from TTL chips. Instruction sets were crude and limited, but they were fantastic toys. (My own first machine had an average instruction length of 18 BITS, which were read one at a time, out of about four thousand bits of core memory. I was real proud of it; it almost worked properly.)

A third alternative was possible. If you wanted to spend a thousand bucks or so, you could buy a commercial trainer for a particular microprocessor. These were intended for electronics firms that wanted to develop their own microprocessor based products, and were priced to match what such firms could afford to pay. Home users who could afford (or even obtain) these, were rare and much envied.

On or about 1975, however, several significant things happened. First, one of Intel's competitors started selling 8080 microprocessors for only \$30 each. Now, they were cheap enough for the masses. Also, a company named MITS packaged the 8080 in a large box with a huge power supply, 4K of RAM, and lots of slots for expansion cards. This box was the ALTAIR 8800. For about \$500, you could get a "bare bones" ALTAIR in

kit form. For another couple hundred, you could get it assembled and tested (and it was worth it, I'm told).

The existence of expansion cards brought some interesting results. Some companies didn't want to make entire computers, but were glad to build cards that would plug into the ALTAIR. Others that did market their own computers used the ALTAIR's internal bus, so that they'd be compatible with all the available plug-in cards. The first home computer standard was born. It turned out to be both an unwanted baby and one of the ugliest offspring ever seen! the S-100 bus.

You see, MITS never tried to produce a standard; they just wanted an easy way to connect several of their circuit boards together. The 8080 microprocessor produces some very weird signals that were intended to be "sorted out" by a separate system controller chip. This chip would "hide" the weird signals, and present us with saner, easier-to-use ones. Unfortunately, this chip wasn't available when the ALTAIR was designed, and all the "flakey stuff" was put right on the bus. When the system controller chip became available, it really couldn't be included.

Also, this "convenient" way of wiring several boards together made a signal layout that was very inconvenient for later designers. All of this gave rise to speculation that, if you locked 20 monkeys in a room with an 8080 pinout, they'd only take 10 minutes to design the S-100 bus. The home computer field was burdened with this "thing" for years; traces still remain.

The bare-bones ALTAIR was programmed in binary by flipping switches on the front panel. The only output was LED's. In this way, it resembled its predecessors, a bit. The difference is, it was a bit prettier, a lot more expandable, and a whole lot more expensive.

What could you plug into a S-100 type computer? Memory for one thing. A mere two hundred bucks would get you a 4K memory card. Disk drives? No problem. It was about \$400 for the interface and \$500 for each drive. Rather use cassette? The cassette interface cost only \$175, and was SLOW. Other add-ons, all include keyboards (the ALTAIR ordinarily had none), an interface for a TV or monitor, or analog or digital I/O. In 1977, a full 64K RAM board could be had for \$3900. The expandability of this thing was only limited by the depth of your pocketbook!

These machines normally had no internal ROM. In order to get the cassette interface to work, you had to "toggle in" a 20 byte machine code bootstrap program everytime you powered the machine up. You might then LOAD in BASIC, for example, provided you paid the hundred bucks or so to buy (!!) it.

Perhaps it was the BASICs for these machines that gave the first warning that software piracy would someday be a great problem. Most "old timers" will never forget the letter in one computer magazine by a seller of BASIC. The gentleman thanked the many people who wrote and complimented him on how well the BASIC interpreter worked. He then pointed out that he'd checked his customer list (the product was sold by direct mail, only) and found that only a small fraction of those who wrote had actually BOUGHT the product. He then warned the rest that they'd better pay up.

Unfortunately, the piracy problem hasn't gotten any better.

Continued over

Home users were fairly trusting in those days. Many people had no qualms about sending hundreds of dollars to a total stranger to buy a product sight unseen. This innocence vanished after a series of ads appeared in a major magazine, advertising a bunch of non-existent products that the advertiser had no intention of delivering. (He never paid for the ads, either.) Despite some very wild claims that were even inconsistent with the photographs for his "product", the guy managed to take in a fair bit of cash before he vanished. I don't know if he was ever caught.

Those who got the proper word-of-mouth information could have purchased their very own Apple I computer, hand built by Steve Wozniak, himself. Although, this was really intended to be the "guts" of a terminal, it could be used as a stand alone computer. For \$700, you got the assembled, tested circuit board and that was it. You attached your own transformer, keyboard, and monitor. The board had room for a full 8K of RAM, which you programmed, with machine code. The board also had a single expansion slot, into which you could plug a cassette interface, if you chose to buy one. Sounds great, eh?

In 1976, a big step was taken towards affordable home computing with the KIM-1. For \$250 you got an assembled, tested, (and very static sensitive) circuit board. It required multiple power supply voltages, which you had to provide yourself. The board had 1K of RAM, and a small ROM program that controlled a hex keypad and some 7 segment LED displays (your input and output). If you could spring seven or eight hundred bucks for a surplus teletype, it could run that, too. You programmed it in machine code only, but the price was going down!

In 1977, we saw the introduction of the Apple II. It came with an 8K ROM with INTERGER (!) BASIC, a cassette interface about as fast as the TS2068, and graphics and text capabilities only slightly better than a TS2068 in the 32 column mode. It had almost no software available for it. With 48K of RAM, you could get one for \$2,638.

To be sure, the Apple II was designed to be expandable and its original design has been greatly improved. It truly deserves all the success it's enjoyed. But don't forget that people back then paid a huge sum for a machine with little support and capabilities about comparable to the TS2068. Also, don't forget that all the prices mentioned so far should be double to get a comparable 1986 dollar amount.

Back in 1979, I read about this British took named Sinclair who claimed he could make a computer that hooked to an ordinary TV set, had a alphanumeric keyboard, and BASIC built in, so you didn't have to pay extra for it,...all for about \$200! This sounded like a show stopper, but still highly unlikely, considering the price to performance ratio of the KIM-1. (How was I to know that Clive was so smart?)

Well, of course Clive Sinclair made good on his promise, and his later machines have enriched our lives even as we've enriched his pockets. We've seen the rise in the popularity of his machines, and now we're seeing them decline. As the personal computer field has grown and changed in the past, it will continue in the future. It won't be long before our TS2068s will look just as outrageous as the old MITS ALTAIR looks to us today. And as the support for our machines continues to decline, we'll feel a sense of loss. Yet the old time users had so much less. Our machines are far cheaper, far

easier to use, far more powerful, have far more enthusiasts, and have far more commercial support than they could have ever hoped for. They made out O.K.

So will we.

There's nothing wrong with change, or looking to the future. For quite some time, I've owned an IBM PC, with which I do most of my serious work. Still, my happiest time is spent tinkering with my TS2068. Perhaps it's because we still have a core of interested and interesting users who know how to have fun with the machine. But perhaps it's because I still view the TS2068 with a sense of awe, when I realize how much power there is in such a small, inexpensive package, and how far we've come to achieve it.

try these

```

10 REM "ADDRESS BOOK"
20 PRINT "1-ADD NEW NAME", "2-
LOOK UP ADDRESS/PHONE NO.", "3-SAVE TO TAPE"
30 INPUT A
40 GOTO (200+A)
50 LET A$=Z$
60 LET Z=Z+1
70 POKE 16627,Z
80 GOTO 1
90 POKE 16736,I
100 POKE 16759,I
110 LET Z$=""
120 IF A$(1 TO LEN Y$)=Y$ THEN
LET Z$=A$
130 FOR J=1 TO LEN Z$
140 IF Z$(J) <> "E" THEN PRINT Z$(J);
150 IF Z$(J) = "E" THEN PRINT
160 NEXT J
170 RETURN
200 PRINT "ENTER NAME"
210 INPUT Y$
220 LET Z$=Y$+"E"
230 PRINT "ENTER STREET ADDRESS"
240 INPUT Y$
250 LET Z$=Z$+Y$+"E"
260 PRINT "ENTER CITY AND ZIP"
270 INPUT Y$
280 LET Z$=Z$+Y$+"E"
290 PRINT "ENTER PHONE NO."
300 INPUT Y$
310 LET Z$=Z$+Y$+"E"
320 CLS
330 GOTO 50
400 PRINT "ENTER NAME"
401 INPUT Y$
403 CLS
405 FOR I=38 TO Z-1
410 GOSUB 90
420 NEXT I
430 PAUSE 4E4
440 CLS
450 GOTO 1
600 SAVE "ADDRESS BOOK"
610 CLS
620 GOTO 1

```

SHORT TS1000 PROGRAM
by Chuck Dawson

DO YOU GET TIRED OF THE
INCREDIBLY SLOW AND JERKY
SCROLL COMMAND ON THE
TS/1000?

TAKE HEART TRUE PROGRAMMERS.
THE FOLLOWING MACHINE CODE
PROGRAM WILL NOT ONLY PERMIT
YOU TO SCROLL UP, IT WILL
ALSO PERMIT SCROLL DOWN,
SCROLL LEFT, AND SCROLL
RIGHT.

AFTER YOU TYPE IN THE
PROGRAM SAVE IT. THEN RUN THE
PROGRAM. THE PROGRAM IS THEN
STORED SAFELY ABOVE RANTOP SO
THAT YOU CAN USE IT WITH ANY
PROGRAM. TO USE THE SCROLLS
USE THIS LINE IN YOUR
PROGRAM:

LET Z = USR X
WHERE X=32521 FOR SCROLL UP
-32542 FOR SCROLL DOWN
-32566 FOR SCROLL

RIGHT
-32586 FOR SCROLL LEFT
1 REM (YOU NEED 101 SPACES OR
OTHER CHARACTERS IN THIS REM
STATEMENT)

2 LET A\$=
"21097F220440EB015500219240EDB
0C9ED5B0C40132121001901F602EDB
006202B7110FCC92A0C4011F602424
B19EB21210019EBEDB80620237110F
CC90176172A0C401600237EB928047
25718F710F3C90176192A104016002
B7EB92804725718F710F3C9"

3 FAST

4 LET A=16514

5 FOR B=1 TO LEN A\$-1 STEP 2

6 POKE A,16*CODE A\$(B)+CODE
A=(B+1)-476

7 LET A=A+1

8 NEXT B

9 RAND USR 16514

10 NEW

REPRINTED FROM "SYNAPSE" VOL.
3 NO 6 TO 12 JUNE - DECEMBER
ISSUE PAGE 6, 20

```

5 REM "SLOTS"
10 LET T=0+0
20 GOSUB VAL "500"
30 PRINT AT 15,0;" "
40 LET T=T-SGN PI
50 IF T<NOT PI THEN STOP
60 PRINT AT 18,9;T;" "
70 FOR I=SGN PI TO VAL "17"
80 LET A=SGN PI+INT (RND*5.5)
85 IF I>13 THEN GOTO 95
90 LET B=SGN PI+INT (RND*5.5)
95 IF I>0 THEN GOTO VAL "110"
100 LET C=SGN PI+INT (RND*5.5)
110 PRINT AT 0,4,A$(C);TAB 12;A
$(B);TAB 20;A$(A)
140 NEXT I
150 IF A=B OR A=C OR B=C THEN G
GOSUB 200
160 PAUSE 4E4
170 GOTO 30
200 IF A=B AND A=C AND A=4 THEN
GOTO 250
235 IF A=B AND A=C THEN GOTO 30
0
210 PRINT AT 15,0;"PAYOFF $2"
220 LET T=T+2
230 PRINT AT 18,9;T;" "
240 RETURN
250 FOR I=SGN PI TO 50
252 PRINT AT 15,0;"*JACKPOT*";A
T 15,10;"JACKPOT"
254 NEXT I
260 LET T=T+0+0
270 GOTO 230
300 PRINT AT 15,0;"PAYOFF $5"
310 LET T=T+5
320 GOTO 230
500 PRINT "
510 PRINT " ONE ARMED BAN
DIT "
520 PRINT "
530 FOR I=SGN PI TO 6
540 PRINT "I";TAB 28;"I"
550 NEXT I
560 PRINT "I
570 PRINT "I";TAB 9;"I";TA
B 17;"I";TAB 25;"I"
580 PRINT "I
590 FOR I=SGN PI TO 5
600 PRINT "I";TAB 28;"I"
610 NEXT I
620 PRINT "
630 PRINT "TOTAL = $20"
640 RETURN

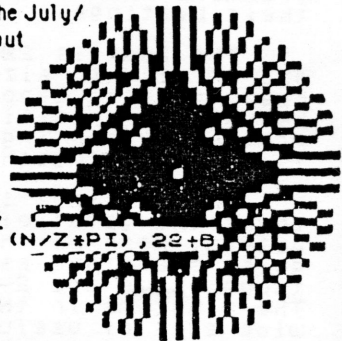
```

This program by Randy Adams of Santa
Cruz CA was printed in the July/
August issue of SYNC. Input
numbers between 1 and
100. (Try 26, 31,
32,35,and 38).

```

5 INPUT Z
7 CLS
10 FOR B=1 TO 20
15 FOR N=1 TO 2*Z
20 PLOT 31-B*COS (N/Z*PI),22+B
*5IN (N/Z*PI)
25 NEXT N
30 NEXT B

```



The QL USERS CORNER

by R. Lussier

The SINCLAIR QL is now to be DIS-Continued. The word has come down by the NEW owners of the Sinclair Computer line, AMSTRAD.

Amstrad has stated that by law they will back-up the QL supplies for seven (7) years. For the remaining such as software, the Software Houses may back off from producing programs as the machine is no longer in production.

We have been told by a company in the States that there is a 2-3 year supply of QL's in the North America area. It seems up to now a few American companies such as The EMC (now Q-Connection) and Ramex (now Foundation Systems) are now getting more into QL products. If more info is required on the QL products available please contact:-

Q-Connection,
15 Kilburn Crt.,
Newport, RI 02840
U.S.A.

Foundation Systems,
17620-26 Mile Road,
Washington, MI 48094
U.S.A.

It was also stated by the new owners of Sinclair, AMSTRAD, that the MICRODRAIVES will also be a part of Sinclair history.

NEW T/S Basic Listing Book

by R. Lussier

This book was authored and published by Joe C. Smith Jr. with the help of many T/S programmers who contributed some of their Listings.

The book is 226 pages thick and 8 1/2"x11" in size. It has the heavy plastic 3-post binding and heavy clear plastic covers for prolonged handling and abuse. It is well put together.

The listings in the book do cover the gamut of the T/S computers. Most of the listings are quite short and easy to type in, though some are 2-3 pages long. The Programs in the book cover a wide area of usefulness such as wordprocessors, games, Databases and educational.

Some of the programs listed are: Stock Portfolio, Monthly Rental Billings, Couponing, the Supergraph, MScript Loader with Fat Characters, and you can even print-out your own Bingo Cards.

After looking through the book and trying some of the listings, I find it is good value for the money. It is also nice to see the T/S users working together on such a project. I rate the book at 80%. The price of it is U.S. \$7.95+\$1.50 p&h for U.S. orders. \$4.00 p&h for foreign orders. If interested in this product you can get it by writing to: BIT/s Software, 3202 W. Fillmore, Phoenix, AZ 85009 U.S.A.

AMERICAN ZX-81/TS1000 SOFTWARE by R. Lussier

The A.F.R. Software, 1605 Pennsylvania Ave., No.204- Miami Beach, FL 33139 has available ZX-Text, ZX-Calc, ZX-Calendar programs at U.S. \$11.95 each and \$1.50 Post each.

The ZX-Text is a Word-Processor using 16K-64K. This provides 1350 to 9000 words per document.

The ZX-Calc is a Spreadsheet program and operates with 32-64K RAM & affords a max. of 3360 characters/spreadsheet. Matrix is 15 columns & 30 rows.

ZX-Calendar operates in 16-64K RAM and keeps 30 appointments in 16K, 100 in 32K, 180 in 48K, or 250 in 64K. Each appointment record holds max. 220 characters.

All the above have many more features than listed but due to limited space of this Newsletter I have listed some of the main features.

These programs were listed in a magazine dated Nov./85, but please enquire with this firm before placing an order to be on the safe side, as to availability.

ART STUDIO Review

by R. Lussier

The "ART STUDIO" is without a doubt the BEST Graphics utility now available for the SPECTRUM/TS 2068 computers (with the ROMSWITCH). This Graphics package is State-of-the-Art Software with Pull Down menus, Keyboard, Joystick or MOUSE operation, 3 orders of magnification, 16 Pens 8 Sprays, 16 Brushes or you can define your own, Solid or Textured fill, 3 magnifications (2X 4X, 8X), Pixel Edit, Pan & Zoom, Font editor with Flip, Invert, and Rotate, Elastic Line, Triangle, rectangle & Circle, Cut & Paste, supports up to 80 columns superb 58 page instruction booklet.

This utility can also be upgraded to Microdrive and Disc version when applicable to your needs. The program allows for up to 18 different Printer Interfaces. With this utility you can create an image- Shrink it, expand, move, rotate, copy, color it. You can Spray a pattern or a shade. You can also make Elastic lines, triangles, rectangles, Circles. You can Stretch, Manipulate, add Text, characters, up down and sideways with any proportion or size, you can even ZOOM in for really fine detail work and then you can Shrink the whole works.

The rating for this program is at 99% for Money value, Ease of Use, User Friendliness, Graphics and just plain usefulness for those into Computer Graphics and other would be Rembrandts.

There is also an extended version for the Spectrum 128K computer making use of the bigger memory. This program is now available from:- PPC Mail Order, 9 Benneck House, 100 Tolpits Lane, Watford, Herts WD1 8PZ, England. Price is £13.00 inc the Postage. The RRP is usually at £17.00 inc Postage. This program also uses the LENSLOCK system for protection against pirating.

1 REM BORDER DRAWING UTILITY
BY KEN ABRAMSON

```
10 PRINT AT 9,0;"ENTER BORDER
GRAPHICS CHARACTER:"
20 INPUT B$
30 LET B=CODE B$
40 CLS
50 REM YOUR TEXT (IN PRINT
STATEMENTS) CAN GO INTO
THIS LOCATION

9900 REM BORDER
9910 FOR X=0 TO 31
9920 PRINT AT 0,X;CHR$ B;AT 20,X
:CHR$ B;
9930 NEXT X
9940 FOR Y=0 TO 20
9950 PRINT AT Y,0;CHR$ B;AT Y,31
:CHR$ B;
9960 NEXT Y
9970 PRINT
9980 STOP
9990 SAVE "BORDER"
9999 LIST
```

Cont. from page 1.....

not all folks --- how about the T/S 2080, the 80 column printer. It's here along with a 40 column little brother. These are the Seikosa GP-1000 and GP-505 respectively all wrapped up in Timex clothing. Last but certainly not least - a serial interface (probably to connect the printers). I said available in North America --MEXICO. Timex of Portugal is shipping in an initial load of 10,000 units. Should be there now. Sure sounds exciting. I'll keep you posted.

For a computer concept that was supposedly killed off more than two years ago things are more alive now than ever. It seems the only one who dropped the ball was Timex U.S.A.

One last thing before I finish up. If anyone knows of any 2068s for sale, let me know. I've had an ad in the Buy & Sell for three weeks and not one reply.

.....ROD

Sinclair Research Sells Out!

THE ZEEPER SPEAKS...

My dreams have come true. Who would have thought that Clive would give up so easily. Can't he take a joke? Don't go away mad, Clive. It sure has been fun---I threw everything I could think of at you poor fools. I have a real feeling of accomplishment about the ZX81 keyboard but the RamPack wobble was a stroke of genius. I must admit, my brother came up with that one. The 2068 was certainly fertile ground. Imagine, a machine able to address 10 megs being loaded from a TAPE RECORDER. They almost came up with a decent keyboard but a little whisper in the right ear fixed that. The printer was fun---the ink faded on the paper in the sun light. One of my happiest days was when I was able to sublimally convince the new man at TIMEX that no self respecting toy watch maker should be mixed up with those new-fangled computerwhatzits. I didn't reckon on the hardness of the average Sinclair nut. As soon as I dried up one area of supply than another popped up. You probably thought you had me whipped when the TC2068 came over from Portugal. Little did you realize that was all part of the master plan---as you soon found out. Lo and behold if you didn't eventually go back to the land of the beginnings for support.

The QL might have given me a run for the money until I came up with the idea of a 32 bit machine being loaded from a MIDGET tape recorder. And still you bought the infernal things. With the appearance of the 128, the war started to get serious. You left me no choice but to put a stop to this once and for all.

From now on you are just going to have to accept the fact that if you want to play with computers, you are going to have to play with the usual mundane, unexciting, characterless boxes everyone else puts up with. I don't think this AMSTRAD will be any threat to the 'status quo'. (Have you seen this Alan Sugar? Looks like he sold stainless steel pots door to door before he discovered computer suckers.) There was the slight chance that AMSTRAD could have made life a little more difficult if the QL had been kept in production but I quickly put the kybosh to that threat.

Well, it looks like all is right with the world from where I sit. I think I'll wander over to adjacent fields to see how things are going. Don't worry, I'll still look in every now and then and as soon as I see the slightest amount of innovation or creativity rearing it's ugly head I'll be back faster than you can lose your memory in a power glitch. Have fun kiddies.

....Did some one say some thing about electric cars and 'planes? Hmmm.

SPECTRUM 128K MIDI SYSTEM

by R. Lussier

For the owners of the NEW Spectrum 128K computer there is now available a Musical Synthesizer for the price of £91 inc. Postage (Can. \$197). This package includes the Echo Keyboard, Organmaster in cassette form, this will allow you to imitate instruments such as a Piano, an Organ, Hawaiian Guitar, Strings (Violin) and a wide range of the percussion effects and a synthesizer mode allowing you complete control of Voice envelopes so you can design your own Sounds & also includes the Echosound speaker/amplifier which provides 5 Watts output to its big 6" twin cone speaker, complete with the Volume and Tone controls. The above also includes the Spectrum Interface and all the Cables and a free KEYBOARD TUTOR. If interested in this great product, it is available from:- The HCCS, 28 Hitchin St., Biggleswade, Beds., England. It might be prudent to write to them first and ask for their brochures.

TS 2068

This colorful program
by

Doug McRoy of Laurel MD.

```
1000 REM Color slash
1001 CLS : PAPER 0: CLS : BORDER
0: CLS : BORDER 0
1002 INK 7: DRAW 0,175: DRAW 255
0: DRAW 0,-175: DRAW -255,0
1003 FOR q=0 TO 7
1005 FOR l=0 TO 56 STEP 8
1007 FOR m=0 TO 56 STEP 8
1010 LET l=INT (RND*88)+0
1015 LET m=INT (RND*128)+0
1020 PLOT m,l: INK q: DRAW m,l
1030 NEXT m
1032 NEXT l
1040 NEXT q
1045 GO TO 2003
2003 FOR q=0 TO 7
2005 FOR l=175 TO 119 STEP -8
2007 FOR m=255 TO 200 STEP -8
2010 LET l=INT (RND*88)+0
2015 LET m=INT (RND*128)+0
2020 PLOT 255-m,174-l: INK q: DR
AW -m,-l
2030 NEXT m
2032 NEXT l
2040 NEXT q
2045 GO TO 1003
```

Hex Loader

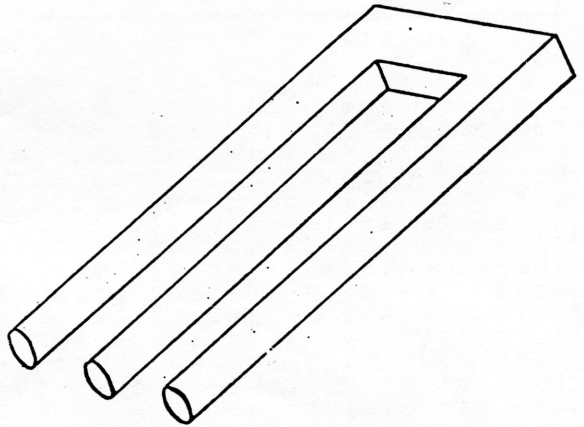
```
6997 REM HEX LOADER
6998 STOP
6999 *** WRITE ***
7000 CLS
7010 PRINT "READ OR WRITE? (R/W)"
7020 INPUT N$
7030 PRINT "START ADDRESS"
7040 INPUT S
7050 PRINT "FINISH ADDRESS"
7060 INPUT F
7070 IF N$ = "R" THEN GOTO 8000
7080 For N = S TO F STEP 8
7090 LET T = 0
7100 PRINT N, " - ";
7110 INPUT A$
7120 PRINT A$, " - ";
7130 INPUT TOT
7140 PRINT TOT
7145 LET Z=0
7150 FOR K=1 TO LEN A$ STEP 2
7160 LET C=(CODE A$(K)-28)*16+C0
DE A$ (K-1)-28
7170 LET T=T+C
7180 POKE N+Z,C
7190 LET Z=Z-1
7200 NEXT K
7210 IF TOT=T THEN GOTO 7240
7220 SCROLL
7225 PRINT "ERROR - PLEASE INPUT
AGAIN"
7230 GOTO 7090
7240 NEXT N
7250 STOP
7999 REM *** READ ***
8000 FOR N=S TO F STEP 8
8005 SCROLL
8010 PRINT N, " - "
8020 FOR B=0 TO 7 STEP 8
8030 LET C=PEEK (N+B)
8040 LET F$=CHRS (INT (C/16*28))
8050 LET S$=CHRS ((C-((CODE F$-2
8)*16))*28)
8055 PRINT F$, S$;
8060 NEXT B
8070 PRINT
8080 NEXT N
```

LIBRARY NEWS

A note to all, we are setting
up a tape library.

Anyone interested in donating
any software to the library,
give Ian McLean a call at:
738-1664

V.S.U.S.
2006 HIGHVIEW PLACE
PORT MOODY, B.C., V3H 1N5



*CIRCLE CHESS TS USERS
C/O A.F. STANONIS
BOX 63
DES PLAINES, IL 60017



THE VANCOUVER SINCLAIR USERS GROUP HAS BEEN IN EXISTENCE SINCE 1982. WE ARE A SUPPORT GROUP FOR THE OWNERS AND USERS OF THE: MICROACE, ZX80, ZX81, T/S/1000, T/S1500, SPECTRUM, SPECTRUM +, T/S2068, AND QL COMPUTERS.

PRES.--BOB LUSSIER
V/PRES.--KEN ABRAMSON
TREAS. & EDITOR.--ROD HUMPHREYS

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ROD HUMPHREYS
2006 HIGHVIEW PLACE
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